FINAL

Workgroup 6 – Disease program standards for ornamental/tropical finfish. Tampa, Florida. December 13-16, 2004.

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1. Introductions – Participants introduced themselves and gave a brief autobiography.

2. Presentation on NAAHP – The Federal Team gave a PPT presentation on the National Aquatic Animal Health Plan (NAAHP). A discussion followed on diseases that are "reportable" versus what diseases concern the industry. Consideration given to imports, domestic production, marine ornamentals, and plants. Industry reported that they have never seen disease that were the result of trade by the industry but questions were raised about the introductions into the US of koi herpes virus (KHV) and spring viremia of carp (SVC).
   Additional comments:
   Florida producers have "traceability" on products shipped from Florida.
   Industry favors promoting better animal health, not just producing disease lists.
   Industry ships fish internationally and domestically, hundreds of different species and in large numbers, every day.
   The only disease on the list from NAAHP, Chapter 4 that affects ornamentals is SVC.
   Tropicals/ornamentals have been grown, imported and exported in Florida for many years with no significant disease issues.

3. Review charges of WG 6 – whole group

4. Case studies – ISA and SVC – By APHIS representatives

   A summary of the ISA program can be found on APHIS' website in the working group 4 report.

   ISA hit Canada in 1996 in New Brunswick – across the border from the U.S. salmon farming industry in Maine. The Maine industry was concerned about ISA coming to the U.S.

SVC – APHIS should consider providing indemnity due to loss of production, not only for animals removed as part of an eradication program.

Comment by industry rep, based on how first SVC outbreak was handled, small farmers wouldn't want to report a foreign animal disease if it means being out of business for a certain amount of time while eradication, cleaning and disinfection efforts are underway.

Given complexity of industry, how does one track diseases from one farm to another? Very difficult finding out where a disease may have originated from.

Comment -There are some diseases that cause problems growing tropical fish, but they are dealt with. Angel fish disease example – wiped out angel fish in a farm. Once disinfected and restocked with clean fish – problem resolved although it may pop up from time to time.

Observation - It should not be financially crippling to report a disease.

The industry has been proactive in dealing with disease issues – such as the angel fish disease. There were initially diagnostic problems, but industry and State invested resources into dealing with it.

Wild-cultured fish interactions. With SVC in the farmed population, some conservation agencies also had concern for certain wild populations and potential crossover into those populations. Potential for birds to move infected animals from one location and into a new location (wild to farmed and farmed to wild).

What constitutes a zone? A zone can be as small as a farm. If you can demonstrate freedom through testing and bio-security, you can continue to do commerce even if surrounding areas are considered positive.

Disease response plans are pathogen-specific and based on the pathobiology – transmission, etc. How much of a problem is the pathogen/disease? Prioritizing the diseases based on their impact – how much of a problem they potentially can be (SVC vs. KHV vs. angel fish disease).

The biggest problem with SVC was that there was no "plan". We didn't know how the disease was to be tackled. To look back on it today, if there is a plan in place there are some tools in place with which you can make business decisions. To know what is going to happen is better to not know. Uncertainty by farmer in knowing what the response by the federal Govt. to a reportable disease was going to be, like SVC, was devastating.

Like what was done for ISA, it would make sense to develop a table for koi and goldfish to help determine the value of the animals should the disease appear.

SVC is found in wild populations. In Europe, wild fish are found near infected farms. The virus does not appear to persist in the wild. Once the farm is cleaned up, the virus tends to not persist in the wild. However, the Cedar Lake case in Wisconsin is not related to an infected farm and we cannot be sure if the Asian strain (found in the U.S.) behaves similarly to the European model.

If birds can move the virus everywhere, what is the point? The disease may become endemic in an area and you may just have to live with it. However, it is still possible to create "free" zones.

Arkansas baitfish industry recognized that due to bird transmission, there is a need to keep a pathogen out of the "area" and not just a single farm, as farms are in close proximity. If the pathogen is found at one farm, you may have to assume it will spread to the whole industry.

5. Review of disease list.

Criteria for reportable diseases are under tab 6. APHIS is required to report the occurrence of these diseases to the OIE. The program disease list is found on page 5 of draft chapter 4. These are the diseases the Federal government would either try to contain and eradicate or control and manage.

Producers have issues with an external agency coming in to Florida and telling the industry what is a "problem" for them. For example, red sea bream iridovirus and epizootic ulcerative syndrome – have Koch's postulates been fulfilled? We should be concerned with pathogens, not the common disease name.

RAAD's – we have an obligation to report via OIE, not necessarily "act" on a finding.

PAAD's – these are the diseases to which we would "react".

If there is a highly significant disease, not necessarily a foreign animal disease, we should have a plan for how to deal with it. An example is mycobacteriosis. It is industry's responsibility to tell us what these diseases would affect the tropical/ornamental industry. We also have to consider the complexity of the industry in Florida, i.e. raising over 100 different species together and movements.

There may be diseases or pathogens that are only associated with certain species at certain times. In the context of the OIE reportable diseases or US program diseases, we need to list only the species considered affected by the listed diseases, i.e. red sea bream virus should be relevant only for sea bream, not ornamentals.

Recommend refining the chapter to reflect specifically what is to be done if a PAAD is found, specific species considered affected and specific tests considered valid for detecting the pathogen.

Florida fish farmers believe they are in a unique position - when a problem arises and industry approaches the State/university, the problem is addressed.

Red sea bream – if we do not have the fish in the U.S, it was suggested that it be removed from the PAAD list.

Suggestion was made to seek industry and fish health specialist input to identify a risk analysis methodology as a decision-making tool to rigorously review diseases before naming them as a PAAD.

Suggestion was also made to present the PAAD list as a matrix including species, life stage, water type, and production system information.

Ornamentals are not susceptible to a number of these OIE diseases. Can we zone out the entire ornamental industry from all of the diseases on the list except for the ones that actually can affect the ornamental species (like SVC)? Declare freedom from the disease based on 1) lack of species susceptibility 2) lack of occurrence. However, if we've never looked for it, how can we prove that it isn't here?

See no need for these diseases to apply to the ornamentals if they cannot serve to transmit the disease. Spring viremia of carp is the only disease the industry is really worried about – but more an economic concern. Florida is a State that may benefit from being zoned for SVC.

Planning is good, but it's difficult to plan if you don't know what can happen.

What diseases do tropical fish/ornamentals die from:

Trichodina
Aeromonas
Mycobacterium

We know what to do with these through management to deal with the disease. Ornamental fish are impacted by many common diseases but none that warrant the attention of federal agencies.

90% of the disease problems are environmental in nature.

Aquatic animal health professionals in Florida have been working to develop a voluntary aquatic animal health plan for producers within Florida with the intent of harmonizing with the NAAHP. The plan divides industry into different

commodity groups. Within each commodity group there is a response plan for diseases of different categories and a prescribed set of actions to accompany each category. Emergency response plans are included. Incentives for participation are being looked into – for example a "healthy from Florida" logo for those farms participating in such a plan. This plan would not overlap with Florida State's BMP program. A question was posed of whether there is a provision in the NAAHP to recognize and support State or private health management activities such as with Arkansas's two year effort to test for SVC.

Divisions also include retail, wholesale, hobbyists, etc.

Concern of voluntary vs. regulatory program.

What is industry's perception of the plan? Industry has not yet seen it….being evaluated for whether or not it will work, etc. The plan is still in the process of development.

Are other States developing these types of plans? Not aware of anything in California. However, New Jersey and Maryland have developed and implemented aquatic animal health management plans with Wisconsin in the process of developing a plan.

Voluntary New York cattle health program (NYCHPS)– looking to modify and adapt for aquaculture? Mandatory core components for a voluntary program. Gold and silver levels of compliance above and beyond the core components.

Hobbyist and retail would be included but without BMPs since they don't need an aquaculture certificate.

BMP program has to be followed by industry for their aquaculture certificate.

Because you're dealing with a live product – if you sell something and it dies, you're business will suffer since customers will not return. There is an expectation that product will be reasonably healthy.

Is there a perceived threat of any disease we could bring in from another country? Any attempt to regulate product import will hurt the domestic market as well. Industry is just as dependent on imported fish as on domestic sources as it is not possible to produce all the varieties domestically and the hobby relies on all the varieties. Imports have to be easy and economical.

One importer indicated a preference for building a facility for a foreign supplier in the foreign country (where possible) to show them how to treat the normal parasites found in that country. Treat the animals, allow a recovery period, ship, and then treat upon arrival. Most of the parasites can be treated. The less easily treated diseases, such as viral infections (who knows what they are, or they are

coming from since there are so many different places they are coming from) may present some concern. How can you prepare for them ahead of time?

The infrastructure is in place to deal with a problem when it arrives. State and industry are proactive in addressing disease issues.

Most fish end up in someone's aquarium – so they are not as much of a threat to other producers or the environment.

A general description of a preventative practice was provided by an importer concerning the receiving area for imported fish – that this area would not come into contact with domestically produced fish. Essentially a quarantine-type procedure is in place. Visitors to a farm would not enter the receiving area for imported fish.

Programs exist to help prevent introduction of pet aquarium fish into natural environments – although can never completely eliminate the problem. An example of this is the educational program called "Habitattitude" jointly developed and guided by the Pet Industry Joint Advisory Council, USFWS, and NOAA-Sea Grant. See http://www.habitattitude.net for additional information.

There are no diseases that should be put on a list for tropical fish. The listing of SVC for koi/carp may not be appropriate given the questions that surround its historical presence in the U.S.

Koi herpes virus – one participant commented that Associated Koi Clubs of America (AKCA) wants this issue addressed. Are funds going to be available if we do get it KHV in cultured populations? Without a KHV program, there won't be any funds made available from the Federal government.

Producers in Florida received some training from the State regarding SVC and KHV. The two biggest issues that KHV is not being addressed from a regulatory point of view are twofold: 1) it is very widespread at this point and 2) diagnostic and latent carrier issue. This is why it is not listed by the OIE.

An outbreak of KHV results in large losses in a short period of time. SVC results in lower mortality than KHV. SVC could be "lived with" to a greater degree than KHV. Should there not be some kind of contingency plan or operational plan regardless of whether or not the disease is listed? The disease should be listed if it's a disease you want a plan for. In the draft Florida aquatic animal health plan, KHV is included – depopulation and cleaning and disinfection are called for when KHV is diagnosed in Florida (voluntary plan – depopulation, etc. is not mandated by the State).

When you repopulate, you don't know if you're new stock is free. However, if you keep the infected fish, the problem will be perpetuated.

Biosecurity and education has been the way to deal with KHV to date.

Is KHV a disease that should be addressed at the national level? If there are testing issues and the disease is endemic, how do you deal with it? But should it be on a list and impose regulations on an industry?

Being listed does not necessarily imply regulations. If there is an indemnity component, then regulations are required to lay down criteria for being eligible for indemnity funds.

There are some national programs that are voluntary in nature, but require that the disease is "listed". For example, brucellosis and scrapie programs. Scrapie has recently become mandatory due to mad cow disease (and hence political) issues.

END DAY ONE

Day Two 12-15-04

1. Review of previous day's discussions.

Are there any infectious diseases of concern or emerging problems for the tropical/ornamental fish producers? With a unique and long term experience in international trade, disease management and the needs of small, family operated farms, tropical/ornamental fish producers have concerns over Federal government involvement of any kind. Ten years ago there was fear of State involvement; however, due to positive relationship developed between the State and industry, the fear proved to be unfounded. Nevertheless, the ornamental industry fears that if there is Federal involvement, issues will be blown up and in the press. Industry has solved problems on its own in the past and do not want Federal control now. Suggestion was made to list and provide a narrative of the different types of aquaculture industries in the NAAHP. Need to communicate the differences. Due to low value of product, fickle buyers, and complexity of industry, producers are of the opinion that terrestrial livestock models for disease management do not apply to their industry. There should not be a blanket model or same approach for all different types of industries.

Australia's Plan as a model can be a problem with using the precautionary principle. Not the same needs as the US. History and policy of risk assessments in US for agriculture products are not based on precautionary principle. NAAHP as a model using risk assessments may help to influence States to also follow by using risk assessments instead of precautionary approach. Consider example of China's trade requirements being unreasonable and negotiations to address these. Emphasize uniqueness of industry. Volume of shipments and anything that stops

this for any amount of time such as quarantines would be devastating. May not be possible to protect selves from any external disease. Concerns primarily are interstate and importations. Exportation is limited mainly to Canada and some island countries. Most exports going to Europe come from South America, to Miami, and then on to Europe. Segments of industry other than those in Florida may feel differently and may want quarantine. Belief by Florida industry is that the main motivation by producers in other states is to gain against competition in Florida, which has lower cost of fish production. Concerns overall in industry for any impediments to interstate or importations.

Federal Plan as model for risk assessments for States to follow may be helpful. The NAAHP could be used by States as a model in order to provide for consistency. State requirements have been impediments in the past. Complexity of industries include turtles, ornamental snails. Consistency can't be carried over for all species, all industries.

Other examples of minor species is bees in APHIS with trade and health certificate now being issued. How is model going to affect wholesale distributors transporting also across state lines? Also, as important to hobbyists as the producers is in distribution of the product. There is often significant co-mingling of product by producers/wholesalers. Model needs to take this aspect into consideration. Also note the short shelf-life on shipping live animals.

Ornamental shipment held at a import city for 4 days because one fire ant was seen by inspector on a box of fish in the truck at interstate transfer point. Result – all fish died.

Tropical fish is second largest hobby in US.

Steptococcus infection concerns? Zoonotic diseases? Mycobacterium for example. Ubiquitous in the environment. Much education is distributed concerning this pathogen. More of issue if exposed human is immune-compromised. It has been documented that Mycobacterium can be found in swimming pools, drinking water. Strep vaccine is being worked on. Certain groups of fish more than others are at risk to Strep infections. Also with immune-compromised and elderly with other underlying problems. Some differences in strains of pathogens. Columnaris, Aeromonas are larger problems for industry than Strep or Mycos. Deal with Columnaris, Aeromonas by treatments with antibiotics. Not significant zoonotic problems. Example of anthrax brought forward for consideration, deadly only when purposefully introduced, found in many areas in environment. Any disease according to OIE with zoonotic potential will be regulated. Also potential problems with PETA. Fact sheets and NAAHP can be helpful as an education tool.

One Mycobacterium case stock enhancement animals in 97 was an issue because called "fish TB". State veterinarian concerned over not reporting. Issues with

public relations and education more than public health. Not use fish TB term any longer. Have addressed the issue. On the JSA Task force, we have tried to separate human health from animal health issues. Precautionary principle vs. risk assessments is also important here on defining the real risk.

Have modified management techniques, plan to get rid of, if do find Myco. Risk analysis should replace the risk assessment term to be more inclusive.

2. Zonation

Are there zones needed? Zone can be country, state, farm, etc. In cases of ornamentals, concerns primarily over SVC for zonation. Important for showing freedom from. Separate areas for SVC susceptible animals possible way to deal with SVC. In Arkansas voluntary program of setting aside areas for SVC tested animals for 2 years as per OIE, can impact movement of animals. Potential to zone certain areas of FL as SVC free. Can group of farmers or states ask for federal to recognize certain zones? Part of the plan would be to establish zones. Not an official procedure at this point. Could be a provision for this in the Plan. If sufficient testing is in place, could be considered free zone. Once demonstrate free, and no introductions, testing levels can be lowered. No official federal document is available to date, but is needed to show is free area. Can be large benefit to producers. Incentive for farmers to be testing and participate in a SVC program. Problem for one producer in Arkansas and others in competing states including some large koi producers is using unprotected surface water sources so are not meeting other requirements besides inspection testing. However, most producers in Arkansas use well water. In FL, it is all ground water, not surface water.

Koi production in FL is significant. Interest also in fancy goldfish production. 20 farms approx raise Koi or goldfish as only product in FL. Protocol to establish SVC free is OIE dictated. US farmers would like more opportunity by US competent authorities for input into OIE protocols for testing SVC. They should be risk analysis based protocols.

Will there be a standing advisory committee from industry for the NAAHP? Plan coming out through JSA. Opportunities for comments, flexibility, living document will be provided. We are not making rules, just input into the NAAHP. Potentially could be a committee set up by JSA in future, but not at this point. FACA rules must be followed.

3. Surveillance and testing.

Recommendation to use the terms “general” and “targeted” regarding surveillance rather than the terms “active” and “passive”. There are a variety of purposes for

surveillance. Are health certificates used? What requirements on these certificates? More testing, labs, etc. are needed.

Sub-samples of animals are inspected by accredited veterinarian by visual examination. If the inspector visits a farm, the entire shipment might be viewed, but if not present in person at a farm, they will look at sub-sample brought to a lab. Country of origin, small or large animal certificates, not specific to aquaculture. Producer needs to determine requirements of country shipping to. Recommendation that APHIS could update list of requirements. Working towards having fish health certificate. No testing requirements to date in other countries. Process happens very quickly. No general sense of population over time due to co-mingling of product. Typically, not a single farm shipping fish, or not a facility represented, but several farms with a mixture of farmed and wild. APHIS position of VMO requested by (and established by APHIS) industry to avoid a 2 day delay in getting stamp for shipment. Fish can not be held in small crowded containers for any length of time. SVC will require more than visual inspection if country requires it. Generic live animal health certif., not specific diseases required at this point. Inspection evaluates if animal is alive, has no obvious lesions, and has no respiratory problems, or has visible parasites such as Ichthyophthirius multifilis, "Ich".

Vet-client-patient relationship is established. Know protocols producer is using. Several private vets are also doing visual inspections. But countries are not requiring SVC surveillance. There is a need for an export certificate to address the issue if there is no disease of concern. Electronic certificates would be helpful but would be easier for States to then require e-certificates. Need box to check "by best of my knowledge, by visual inspection" with no disease of concern tested for.

There are some cases where certificates were needed due to country requirements. Suggestion was made to use general livestock certificate already used by APHIS. However, may not be appropriate for fish. Are health certificates needed at all? Potentially the Federal government could negotiate with other countries to remove these requirements. However, SVC is on list for Europe, more for fishery than koi or goldfish. Not much export market to Europe for koi or goldfish.

When does product truly represent a risk? A good example of a high risk activity is shipping white spot infected shrimp. If country is free of the disease, can do away with certificates, but exporting country needs to be able to show this is true. Surveillance could be simple for some fish groups but very difficult for others due to nature of the industry.

Industry may not have had concerns for SVC until APHIS required eradication and control. SVC became a concern due to OIE lists. It is a serious disease of common carp in Europe. There is concern in Arkansas over animal health, not just regulatory issues. It is easy to see virus cytopathic effect (CPE) in culture but

those susceptible species not typically targeted for testing and difficulty of samples in wild fish may be reasons not seen earlier. Good chance SVC is already endemic in many parts of the U.S. Zones may have to be declared free on a farm-by-farm basis.

Concerns for SVC in wild fishes and endangered species by USFWS and others. Still working to show if SVC is endemic or not. Producers interested in establishing stocks are virus free could be involved in a voluntary program.

Is there a provision in Plan for industry input for risk analysis? Some diseases may not be practical for disease management. Some money may be routed to do risk analyses or contracted out for studies to be done. Direct industry input may be difficult due to FACA issues.

US Animal Health Association is another method for input by industry and States. Will this be a component in the Plan that this will be a way for input? Aquaculture review councils are present in FL as a method to consult industry. Has this been considered as a requirement in the Plan for industry representation? There is potential for an advisory committee to be established in the future. Restrictions in how it is done would need to be determined.

Suggestion of not determining a list of diseases but a process for what will happen to diseases on a list, etc. How will Plan address problem of certificates required by States? Or address the possibility of not needing certificates? Model of Plan could be used. Suggestion was made to keep the list of diseases short and zone out tropical fish for all diseases except for SVC.

Florida Dept of Agriculture laboratory is getting approved for Biosafety 2 status. Virus isolation approval is to be received within days. Currently, herpes virus is tested for by lab. Cost of testing has been problem. Need local lab at local price. FL pays for part of cost for instate testing. Only one now for ornamentals is SVC, all on voluntary basis. For mollusks and crustaceans there are certain diseases to be tested for in FL for protection from these diseases. Several private vets and two diagnostic laboratories have large support for the industry.

Industry does own surveillance. Watch closely for signs of problems, morbidity or mortality. If anything seen, samples sent to Ruskin lab. How do we get this data to Federal level to show surveillance being done? Could be potentially part of the "Healthy from Florida" campaign (which is still in the formative stage and has not been implemented or publicized) in the future. This includes equine in voluntary plan for protection. In Arkansas, use more of HACCP model.

Feb 1st is the deadline in the Federal Register for comments on the three agency export certificate. USFWS Federal Register final rule for14 designated ports for export of tropicals. For CITES and ESA species. Not animal health issue but

species issue. Concerns expressed over identifying who is responsible for signature of certificates. Export certificate is to address some of these problems.

Segrest Tour; Ekk-Will water life resources; Ruskin Lab

END DAY 2

Day 3 12/16/04

Disease Management Issues
In the preliminary working draft of a Florida Aquatic Animal Health plan, a list of diseases is included to use as a tool for pathogen reduction or elimination (health management tool) and not for regulation. It would be a voluntary plan and not all farmers will be able to participate due to the standards to be met.

Health certificates provide some assurances, even if they are only based on a visual inspection to ensure the fish are not obviously sick or diseased.

Veterinarians interested in fish health are being "trained" by the aquatic animal health veterinarians already in Florida to help assist industry and assist in moving product.

Although Florida may be unique in tropical aquarium fish production, there are producers elsewhere in the country and when considering a national plan or a disease list, the needs of the producers outside of Florida may be different.

On a national level, surveillance is the responsibility of government not of producers, but will be supported by information provided by producers.

The purpose of the plan is not to set aquatic animal health requirements for producers but to facilitate certifying the health of animals in a meaningful way when required by purchasing States or countries.

Florida has a set of BMPs that are required as part of the Aquaculture Certificate of Registration. The BMPs do not include language that would satisfy the requirements of a health certificate. If the "AQ" number could be linked to health certificates, it could be easier for some producers.

"Healthy from Florida" could only apply to fish raised in Florida, not those that are imported into Florida for redistribution. It should be noted that 60 percent of all tropical fish are imported and co-mingled with domestically produced fish when shipped to US buyers.

At consumer level, there is little interest in discerning a domestic from an imported product and because of co-mingling, it would be difficult if not impossible to separate what is grown in the U.S. or Florida from what is imported.

If import of ornamentals is perceived as a large enough threat for disease introduction to require quarantine, the industry would probably come to an end. Also, when in quarantine, what will be looked for and for how long will the animals be left in quarantine?

To try to implement a credible quarantine operation for tropical fish will shut the industry down. The responsibility for quarantine is on the purchaser.

Even if quarantine is not required (because it's not practical or it's not necessary), mitigating risk through other disease management tools should be considered where possible.

HACCP process involves identifying areas of highest risk and mitigating those risks.

The industry has been around for a long time with no major issues having evolved it shows that the risk management practices in places are working.

Diversity of the industry may be reason why there has not been a problem with any one disease – if it affects one species, it may not affect the others and therefore the industry will not be decimated by any one disease.

Less is more – instead of just having a list of diseases define what the real risks are and how they are being addressed.

The plan is to be a base document to help create a "fair" playing field. States will be able to implement whatever they choose, but with a framework, it's possible that State regulations will be more consistent and fair. The NAAHP is not to be a top down approach.

We would have to have the capacity to carry out programs for fish within the agencies, and not identify new issues prior to conducting risk assessments to determine if they truly are risks.

The plan may create a base from which the State can go above and beyond to meet the needs of its industries.

Florida BMPs are minimal standards – a farmer can go above and beyond those standards.

SVC – eradication, indemnification, insurance. The industry would not want to shut the door on the possibility to have indemnification, insurance. Indemnification for aquaculture is 50%. Industry deems indemnity programs for aquaculture unfair due to the lower percentage of indemnity compared to traditional livestock programs. Discrepancies in indemnity also exist in the

terrestrial realm. Indemnity level may be based on the "degree" of the emergency as determined by the Secretary of Agriculture. Office of Management and Budget (OMB) makes the ultimate determination on level of indemnity – i.e. decision made outside of the USDA agency. There is an expectation that States and industry make up for the remainder of the indemnity value. Crop insurance for aquaculture is an area being investigated. Contact Gary Jensen, USDA-RMA, for information regarding a project to evaluate crop insurance for aquatic species. Hard clams have been in a pilot crop insurance program for several years.

USDA risk management agency is evaluating the economic risks that will form the foundation of Federal insurance/crop insurance. Mississippi State is looking at economic risks for aquaculture. Disease was identified as the number one risk to aquaculture, in general. For ornamental tropical fish, weather is the number one risk.

If government is going to require eradication as part of its program, indemnity should be 100%.

In contrast to salmon that have salvage value, koi and ornamentals would have not salvage value.

There may be some baseline commonalities that can be addressed in a national plan, but it may be prudent to spend more time with specific groups for developing programs much like terrestrial programs (i.e. cattle, hogs, and poultry are each different).

SVC program in Arkansas is for State and marketing purposes that have nothing to do with Federal programs. Koi and bait farmers can't sell to certain States or companies without having SVC-free certification based on testing done at University of Arkansas, Pine Bluff.

Does the endemic nature of a disease mean there will be no response? No – depends on severity of the disease and whether or not industry is interested in eliminating the disease from their farmed populations.

Emergency response – Teams of experts are formed that can respond to animal disease emergencies. ICS – incident command system – a way of bringing many other agencies (State, Federal) and private persons together and incorporating them into a system that allows for efficient response to a disease emergency.

An example would be after the hurricanes in Florida, groups go out to look for abandoned, diseased and dead animals as well as provide feed, water and other essentials needed in an emergency.

Test exercises have also been organized both locally and internationally.

SART/CART (State Agricultural Response Teams/County Agricultural Response Teams) – Florida's emergency response model. Endemic/exotic disease status for the state of Florida. Emergency response teams also for aquaculture – being developed. Brochures are available on Fl.Sart.com. Table-top exercise has been developed for an SVC outbreak in Florida. Humane society is part of the SART teams and literature is being developed for their library regarding aquatic animals.

Florida BMP plan is a regulatory program. It has brought 20-30 permits from different agencies into one spot. It is an evolving document. Six meetings were held with industry to discuss changes. To have a mandated health plan at each farm was included, but not fleshed out. The Health Management chapter is being amended to recognize that health-related activities are voluntary while the BMPs are regulatory.

Legislation change driven by industry (and legislators to forward the cause) mandated the consolidation of permits into the AQ/BMP program. Technical Advisory Committees were used to draft the BMPs (industry, extension, other regulatory agencies, and local governments).

Field staff goes out to farms to review industry and to audit for compliance with appropriate BMPs.

Final comments by producers:
Restrictions on imports, quarantines would deleteriously affect both importers and the farmers in Florida. Increase in expense would also be deleterious to the industry.

Very unique industry – diverse and also proactive. Anything slowing movement of animals would be devastating. Separate set of guidelines because of the uniqueness of the industry. Follow-up with timelines for development – mechanisms for industry to be able to comment – possibility of advisory boards, etc. It's important we can be able to modify plan as aquaculture changes and evolves.

State works closely with producers and industry has trust and good relationship in the State officials they work with. Fear that Federal government doesn't hear grass roots organizations.

Difficult to come up with a plan that protects both the producer and the importer as the needs of the two are very different. Wouldn't want to see the "list" be any longer than it already is.

END OF WORKSHOP

Participants completed workshop evaluations.

Feedback from participants (evaluations):

-- Overall, high points were given for the workshop organization, effectiveness of facilitators, and meeting facilities. Comments included that the materials should have been sent out earlier as well as notice for the actual meeting. Some participants felt that the group was too large whereas others felt that not all impacted stakeholders were represented.

-- Positive feedback was given from participants for improved and enhanced understanding of the efforts of the Task Force and emerging aquatic animal health concerns.

-- Most participants supported the concept of the working group and the amount of time devoted to the working group discussions.

-- The tropical aquarium industry was appreciative of the Task Force's efforts in getting their input early on in the process and expressed that industry should continue to be involved in how the plan is developed. It was also noted that although producer and importer needs are similar, they may need to be addressed differently in the context of a national plan.

-- For more effective communication, it was noted that it may have been helpful had the group "seen" the industry early on. Additionally, it would have been helpful to the stakeholders had there been initial communication regarding the intent of the national plan and how it differs from rulemaking/regulation development.

-- It was also suggested that work book materials be gathered from the "local team" in the future to ensure that materials more accurately reflect the industry being met with.

-- Overall it appears that for the tropical aquarium industry (not necessarily the ornamental industry in general), that local support from State and universities in Florida provide good aquatic animal health services. The only disease of interest from a national perspective is Spring Viremia of Carp (SVC) and there was some question as to whether or not this disease is important for tropical aquarium fish and whether or not these fish represent potential sources for new SVC introductions due to the nature of the industry. It is not clear what services a national plan could offer the tropical aquarium industry.

-- The shorter the list of "notifiable" diseases that affect the tropical aquarium industries, the better.

-- The ornamental industry, specifically koi, continues to be interested in SVC and koi herpes virus (KHV) disease issues. These growers are interested in what services the plan might be able to offer in terms of certification programs, indemnity, etc.

Further comments from participants:

Note: Several additional comments were submitted after this working group was held. These comments are included below. Although the suggestion was made to not post all

comments on the web since they could be misinterpreted by others not present at the working group, the decision was made to allow these to be posted in keeping the development of the National Aquatic Animal Health Plan an open and transparent process. If concerns or questions arise during the review of these documents, please contact the National Aquatic Animal Health Task Force for clarification.

Another suggestion was made to include the names of the authors of all comments. Although this suggestion was considered, names will not be included in order to keep anonymity and provide for an environment of open discussions in working groups.

General information on Florida Aquaculture was also submitted during the working group meeting and is available on request.

Additional Comment #1:

Is a "plan" needed for tropical fish producers? No. Why: The fundamental programs (education, management, control, eradication) are in place to appropriately respond to aquatic animal health needs.

What is needed?

1) People knowledgeable with aquaculture production practices, species being cultured and aquatic animal health.

2) Good tools (extension, diagnostic, information, testing services, drugs/chemicals, etc.)

How can these inadequacies be addressed?

1) Hire fish, mollusk, crustacean, and reptile knowledgeable vets and/or build program-to-program connections to leverage the expertise (fed-state-university-private).

2) Step up US representation at OIE to argue the real risks the matrix of fish/pathogen/environment pose to commercially produced aquatic species, human health, and wild resources.

3) Expand aquatic animal health extension programs.

3) Identify or develop testing methodology at accredited labs (fed, state or private) for diseases that have been subject to a risk analysis.

4) Publish aquatic animal health extension publications.

5) Provide testing services and develop low-cost, fast and accurate tests.

6) Pour funds and expertise into the Aquatic Animal Drug Approval Partnership.

The NAAHP and farming community would be greatly improved and better served if the co-chairs acknowledged there would be no federal programs dedicated to animal health unless farmers had asked for it, supported it, and benefit from it. An objective that should be added to the plan: Create the means to include farmer representation for the purposes of receiving, understanding, analyzing, and acting upon farmer needs.

Additional Comment #2:

The three areas that should be addressed by a NAAHP include:

1. Simplify export
2. Simplify interstate movements
3. Protect the US aquaculture industries from exotic diseases

Each of these areas can then be applied one by one to the tropical and temperate (koi and goldfish) ornamental fish industries as follows:

1. Simplifying export: International regulations involving health inspections for tropical fish are much less strict than those for many other species and the current system of certificates of veterinary inspection are adequate for the industries need. Some countries do require more stringent inspections of temperate ornamentals, but the US exports very few of these species and industry does not perceive this to be a serious problem. Thus, while trout and shellfish producers need a NAAHP (surveillance, reporting, disease free zones) to maintain their export businesses, the ornamental fish industry is under no such pressure and does not see additional federal intervention as an advantage.

2. Interstate movements: Producers of many aquatic species are faced with an ever-changing morass of state fish health regulations that sometimes make interstate shipments very difficult. However, as with the international trade, there are very few fish health regulations that apply to interstate movements of ornamental fish. Right now, there is not a problem to be fixed.

3. Protection from exotic diseases: This is the most difficult and contentious issue. Many US fish farmers live in fear of exotic diseases that might kill their crops or limit their access to markets. They are familiar with avian influenza, BSE, and the extreme measures required to save the Maine salmon industry in the face of ISA. But, what can a NAAHP do to solve this problem? It is very difficult to protect the industry from the as yet unknown pathogens because a regulation prohibiting the import of fish that had un-identified viruses or parasites would not stand up in the WTO. We can only protect the industry from pathogens that have been well described, for which there are good diagnostic tests, and that hopefully appear on the OIE list. The NAAHP might serve to protect the catfish industry from European catfish viruses or the trout industry from well known trout pathogens, but it will not protect farms from unknown pathogens that have yet to emerge in North America. We can, however, protect these industries from exotic diseases that we know about. Those that are on international lists and of concern (SVCV and the cyprinid herpesvirus family) primarily affect just the temperate ornamental koi and goldfish and not the tropicals (though infection of tropical cyprinids by SVCV can occur). Thus, industries that rely on the import of tropical fish perceive little possible benefit of measures designed to protect them from exotic diseases so do not see this as a benefit of the NAAHP. However, many producers of temperate ornamentals have a different view that is more similar to that of trout producers.

Most of the non-tropical ornamental fish farming industry does very little international import and almost no export, most farms produce only a very few fish species, and the standard fish health documentation is necropsy and testing of whole farms or individual lots. Biosecurity and the fear of imported diseases are major forces and many farms practice rigorous biosecurity and surveillance programs. These farms worry about both the regulatory and the fish health impact of SVCV and have seen the devastating effect that KHV has had on their industry worldwide. These farms see a great benefit in preventing the introduction of exotic diseases like SVCV and KHV and consider this a major benefit of a NAAHP.

In summary, item 1 above is an area of great concern in the salmonid and shellfish industries. The second is of great concern to salmonid, baitfish, and sportfish producers. The third is important to trout farmers, salmon farmers, the catfish industry, baitfish producers, and farmers specializing in temperate ornamentals, but not to tropical fish producers and importers to whom it would be a huge impediment to business. The tropical fish industry perceives little potential benefit to a NAAHP. This is probably why my perception of the response in Tampa to the need for a NAAHP was something like "Thanks, but we've got it covered."

As a final thought we need to remember that many of those that will eventually be interested in the NAAHP have not yet contributed their views to the process. The largest NAAHP challenge facing the tropical fish industry may be in convincing state and federal wildlife agencies (two of which are partners in the plan) that their businesses do not pose a risk to wild fish populations. When state wildlife agencies become more involved in the NAAHP process, the perceptions and realities of those risks will have to be sorted out.

Additional Comment #3:

1) Reemphasize the concern that a greater level of credence be given to the members of the working groups than comments you will receive from others as the plan develops and is opened to public comment. You include in your notes the comment I made about others (even from "industry") proposing a quarantine or other stringent control/surveillance of imports, and that this should be seen as what it truly is - protectionism for market advantage. Likewise, there will be concerns/comments submitted by forces outside the industry, and credence should only be given if they are backed by sound risk
analysis. I believe this is perhaps the greatest concern with a national program involving all three of your agencies. There are plenty of people out there with an agenda other than what you brought to Tampa, who will seize an opportunity to use this plan as their venue for accomplishing their goals.

2) You met with the leaders of the industry and the most knowledgeable health and regulatory professionals assisting them, and what you heard was clear. a) Zoonotics - Not a real risk. b) Protection from the unknown - No thanks. c) SVC - We're listening, and want to cooperate, but have concerns over how this will all play out as a specific program is developed (i.e. indemnification, testing services, fed response, etc.). d) The industry is self-regulating, and has succeeded by doing this for almost a century, without any major disasters to our nation's health, wildlife or industry.
Don't fix what isn't broke.

3) Stay away from the precautionary principle. Because someone else is doing it (e.g. Australia) doesn't mean we have to. The U.S. has operated traditionally on a risk analysis, and this plan should not deviate from that, and if anything be used to strengthen our negotiating within the international community to assist aquatic trade.

4) Fish are not cows, and while the ornamental trade is aquaculture, it is not like any other. The complexities and need for live
transport/delivery/sales in all cases, diversity of species, vast quantity of sources, present unique challenges to any plan. SVC, while a concern is not BSE, Anthrax, or Avian Flu. Don't throw the baby out with the bath water.

5) Recognize the existing expertise of industry and the professionals
working with them, and include that recognition in your plan.

Additional Comment #4:

Tropical fish vs. ornamental fish: We need to recognize that what we visited and heard from in Tampa was mostly the "tropical fish" industry. Tropical fish are a specialized subset of "ornamental fish". The tropical fish industry is heavily centralized in Florida, it is reliant on imports and exports, it involves hundreds of fish species, they are largely exempt form interstate fish health regulations, and the standard documentation of fish health status is a certificate of veterinary inspection. The Ornamental fish industry includes the tropical fish but also many large farms that produce koi and goldfish in other geographic regions and working with very different husbandry and management plans. This non-tropical ornamental fish industry is not heavily concentrated in Florida, it does very little import and almost no export, most farms produce only a very few fish species, and the standard fish health documentation is necropsy and testing of whole farms or individual lots. The tropical fish industry does not regard exotic diseases as a serious issue, but biosecurity and fear of imported diseases are major forces in koi and goldfish farming. Tropical fish farmers ascribe to the "diseases are everywhere and express themselves when husbandry practices are bad" while koi and goldfish producers are more of the trout industry mentality (disease outbreaks occur when you introduce new diseases). Tropical fish producers and koi and goldfish producers are likely to want very different things from a NAAH.

There is a third ornamental fish industry. Many local and regional wholesalers and retailers purchase koi and goldfish directly from overseas sources and do not utilize major importers. While these fish go to aquariums and private backyard pools, these top grade fish are very likely to go to koi shows, even Japanese shows* Most large well engaged farms are aware of the risks posed by koi shows. For biosecurity reasons, many farms either do not participate in Japanese shows, or participate but do not bring fish back to their farms from shows. Koi shows do provide an easy way for a single imported fish to spread the virus to many other collections. Cheaper koi are sold at Wal-Mart and live in home pools and tanks until they die. High quality koi go to shows, are mingled with other fish, and do not represent the comforting "dead end" model for ornamental fish distribution.

Is SVCV important?: The ornamental and baitfish industry of Arkansas regards SVCV as a significant regulatory and marketing challenge, but also recognizes that it is a very serious pathogen and has the potential to cause devastating losses in farms that monoculture cyprinid fishes. It seems that the Florida climate provides tropical fish farmers with a greatly reduced exposure to SVCV disease, but that same industry imports and transships koi and goldfish from known SVCV positive regions. If an infected Chinese fish is imported into Florida held for a few days indoors, then shipped to cooler states, both the infected and fish and other fish exposed to it at the shipping facility pose a significant disease risk. The risk of spreading the virus through koi and goldfish is high, other tropical cyprinids may be susceptible if the are held in the same water with infected koi, especially when the fish may be experiencing significant stress and cool water temperatures. The Arkansas aquaculture industry is demonstrably free of SVCV and they are very anxious to keep it that way.

Wild fish issues: I must point out that the philosophy of some is that fish health status is best assessed by necropsy based testing involving samples of fish large enough to detect diseases at specific levels of incidence. The certificate of veterinary inspection is an excellent tool to meet international export requirements for some species to some countries, but it provides little real protection from most important pathogens. One of the goals of the NAAHP is to develop model fish health inspection/certification that might be adopted by states thus providing some standardization and simplification of interstate movements. If that model resembles the "certificate of veterinary inspection" and requires only gross appearance of good health, it will be met by very stiff resistance from state and federal wildlife agencies and probably several aquaculture groups.